No. 9500152

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Delta and Pine Land Company

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR ORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

*SOYBEAN*

*'DP 3640'*

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty-eighth day of June in the year of our Lord one thousand nine hundred and ninety-six.*

Attest:

*Marsha A. Stanton*
*Commissioner*
*Plant Variety Protection Office*
*Agricultural Marketing Service*

*Dan Glickman*
*Secretary of Agriculture*

FORM APPROVED: OMB 0581-0055, Expires 1/31/97

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

*(Instructions on reverse)*

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
DELTA AND PINE LAND COMPANY

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.
DPX 3640

3. VARIETY NAME
DP 3640

4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*
100 Main Street
Scott, MS 38772

5. PHONE *(include area code)*
(601)742-3351

**FOR OFFICIAL USE ONLY**

PVPO NUMBER
9500152

FILING
Date: MAY 2, 1995
Time: ☐ A.M. ☐ P.M.

FEES RECEIVED
Filing and Examination Fee: $ 2450.00
Date: MAY 2, 1995
Certificate Fee: $ 300.00
Date: 6-4-96

6. GENUS AND SPECIES NAME
Glycine max

7. FAMILY NAME *(Botanical)*
Leguminosae

8. CROP KIND NAME *(Common Name)*
Soybean

9. DATE OF DETERMINATION
1991

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Delaware

12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Dr. Harry Collins
P.O. Box 157
Scott, MS 38772

PHONE *(include area code)*: (601)742-3351

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*

a. [X] Exhibit A, Origin and Breeding History of the Variety
b. [X] Exhibit B, Novelty Statement.
c. [X] Exhibit C, Objective Description of Variety.
d. [X] Exhibit D, Additional Description of Variety.
e. [X] Exhibit E, Statement of the Basis of Applicant's Ownership.
f. [X] Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____
g. [X] Filing and Examination Fee. ($2,325) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act.)*
☐ YES *(If "YES," answer items 16 and 17 below)* [X] NO *(If "NO," skip to item 18 below)*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES *(If "YES," through* ☐ Plant Variety Protection Act ☐ Patent Act Give date _____ )
[X] NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☐ YES (If "YES," give names of countries and dates)
[X] NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

| SIGNATURE OF APPLICANT *(Owner(s))* | CAPACITY OR TITLE | DATE |
|---|---|---|
| Lynne Shannon | MIDSOUTH SOYBEAN BREEDER | 4/12/95 |
| Harry B Collins | VICE PRESIDENT<br>DIRECTOR OF RESEARCH | 4-26-95 |

**EXHIBIT A**

DELTA AND PINE LAND COMPANY'S APPLICATION FOR DP 3640

ORIGIN AND BREEDING HISTORY

| | | |
|---|---|---|
| 1986 | - | Cross 86034 made between DPX 1348 and DP 415. |
| 1987 | - | $F_1$ grown in field. |
| 1988-89 | - | $F_2$ advanced to $F_4$ by bulk pod method in each year. |
| Winter 1989-90 | - | $F_4$ advanced to $F_5$ in winter nursery. |
| 1990 | - | $F_5$ plants pulled from bulks population and threshed individually. |
| 1991 | - | $F_6$ planted in plant rows. Row number 91-0835 was selected, composited, and found to be stable for characteristics listed in exhibit "C" of this application. No variants were observed or are known at this time. |
| 1992 | - | Selection number 91-00835 tested in an early group VI preliminary test and moved on for advanced tests. |
| 1993 | - | Key number 4741 assigned to 91-00835 and tested at eleven locations in advanced yield tests across the midsouth and southeast. An increase was begun and all off-types, if any were removed. |
| 1994 | - | Tested again at eleven locations in advanced yield tests across the Midsouth and Southeast. Increased further. |
| 1995 | - | Tested as DPX 3640 in D&PL tests and state experiment station tests. Increased further and released as DP 3640. |

**EXHIBIT B**

DELTA AND PINE LAND COMPANY'S APPLICATION FOR DP 3640

NOVELTY STATEMENT

To our knowledge, DP 3640 most nearly resembles Young. Differences include, but are not necessarily restricted to the following:

a) Flower color - DP 3640 has purple flowers, whereas Young has white flowers.
b) Soybean cyst nematode resistance - DP 3640 is resistant to soybean cyst nematode race 3, whereas Young is susceptible.
c) Stem canker - DP 3640 is resistant to stem canker, whereas Young is susceptible.

FORM APPROVED: OMB NO. 0581-0056

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT C
(Soybean)

PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

# OBJECTIVE DESCRIPTION OF VARIETY
## *SOYBEAN (Glycine max L.)*

| NAME OF APPLICANT(S) | TEMPORARY DESIGNATION | VARIETY NAME |
|---|---|---|
| DELTA AND PINE LAND COMPANY | DPX 3640 | DP 3640 |

ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code)

100 Main Street
Scott, MS 38772

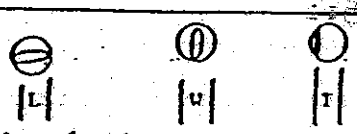
FOR OFFICIAL USE ONLY

PVPO NUMBER 9500152

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[2]




1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[2] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

[1][3] Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

[5] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other (Specify)

★ 6. COTYLEDON COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

[ ] 1 = Low 2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

[ ] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ 9. HYPOCOTYL COLOR:

[3] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ 10. LEAFLET SHAPE:

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other (Specify) _____

11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[3] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

★ 13. FLOWER COLOR:

[2] 1 = White 2 = Purple 3 = White with purple throat



★ 14. POD COLOR:

[1] 1 = Tan 2 = Brown 3 = Black

★ 15. PLANT PUBESCENCE COLOR:

[1] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

★ 17. PLANT HABIT:

[1] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. MATURITY GROUP:

[0][9] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★ [2] Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★ [ ] Bacterial Blight (*Pseudomonas glycinea*)

★ [ ] Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★ [ ] Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojina*)

★ [ ] Race 1 [ ] Race 2 [ ] Race 3 [ ] Race 4 [ ] Race 5 [2] Other (*Specify*) Races unknown

[0] Target Spot (*Corynespora cassiicola*)

[0] Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

[0] Powdery Mildew (*Microsphaera diffusa*)

★ [0] Brown Stem Rot (*Cephalosporium gregatum*)

[2] Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [0] Pod and Stem Blight *(Diaporthe phaseolorum var. sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma var. sojae)*

★ [1] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [0] Race 6 [0] Race 7

[0] Race 8 [0] Race 9 [0] Other *(Specify)* _____

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

★ [2] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [0] Race 1 [0] Race 2 [2] Race 3 [ ] Race 4 [1] Other *(Specify)* Race 14

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [2] Southern Root Knot Nematode *(Meloidogyne Incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[1] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[0] OTHER DISEASE NOT ON FORM *(Specify)*: _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [0] Iron Chlorosis on Calcareous Soil

[2] Other *(Specify)* Tolerant to High Chloride Soils

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[2] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

| CHARACTER | NAME OF VARIETY | CHARACTER | NAME OF VARIETY |
|---|---|---|---|
| Plant Shape | Young | Seed Coat Luster | DP 3682 |
| Leaf Shape | Young | Seed Size | DP 3682 |
| Leaf Color | DP 415 | Seed Shape | DP 3682 |
| Leaf Size | Young | Seedling Pigmentation | DP 3682 |

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

| VARIETY | NO. OF DAYS MATURITY | PLANT LODGING SCORE | CM PLANT HEIGHT | LEAFLET SIZE | | SEED CONTENT | | SEED SIZE G/100 SEEDS | NO. SEEDS/ POD |
|---|---|---|---|---|---|---|---|---|---|
| | | | | CM Width | CM Length | % Protein | % Oil | | |
| DP 3640 Submitted | 140 | 2.1 | 91 | | | 35.5 | 18.7 | 13 | |
| YOUNG Name of Similar Variety | 140 | 1.9 | 91 | | | 37.7 | 18.5 | 15 | |

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:


1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-$A_2$ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

**EXHIBIT D**

DELTA AND PINE LAND COMPANY'S APPLICATION FOR DP 3640

ADDITIONAL DESCRIPTION OF VARIETY

DP 3640 is an $F_5$ plant selection composited in the $F_6$ generation from the cross DPX 1348 X DP 415. DPX 1348 is a selection from DP 417 X Bedford. DP 3640 is a mid group VI maturing similar to Young and 3 days later than DP 3627. It is being released because of it's higher yields potential and nematode resistance as compared to DP 3606 and DP 3627.

DP 3640 has purple flowers, gray pubescence and tan pods. Seeds are shiny yellow with imperfect black hila. It is about five inches taller than DP 3627 and DP 3606. It is resistant to soybean cyst nematode race 3, stem canker, common root knot nematode, frogeye leaf spot, and soybean mosaic virus. It is tolerant to phytophthora root rot and high chloride soils.

**EXHIBIT E**

DELTA AND PINE LAND COMPANY'S APPLICATION FOR DP 3640

STATEMENT OF APPLICANT'S OWNERSHIP

DP 3640 was developed by Grover Shannon, Ph.D., and Harry Collins, Ph.D., Delta and Pine Land Company Plant Breeders. By agreement between employee and Delta and Pine Land Company, all rights to any invention, discovery, or development made by an employee are assigned to the company. No rights to such an invention are retained by the employee.

# SOYBEAN PRODUCT NOMINATION FORM

**Suggested Nominee Number:** DPX 3640

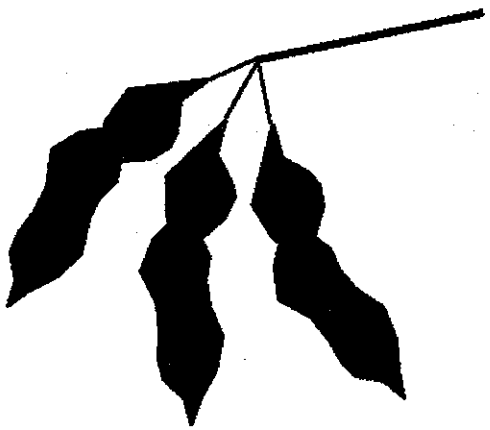
**Experimental Designations:** 91-00835 (4741)

**Submitted by:** Grover Shannon and Harry Collins

**Date Submitted:** January 1, 1994

**Parentage:** DPX 1348 X DP 415

DPX 1348 = (DP 417 X BEDFORD)



Data Collected from 22 Replicated Yield Tests.

I. Plant & Seed Characteristics:

| | |
|---|---|
| Flower Color: | Purple |
| Pubescence Color: | Grey |
| Hilum Color: | Imperfect Black |
| Pod Wall Color: | Tan |
| Seed Coat Luster: | Shiny |
| Leaf Shape: | Ovate |
| Plant Type: | Determinate |
| Peroxidase Activity: | |

Variety Description

# DPX 3640

DPX 3640 is an $F_5$ plant selection composited in the $F_6$ generation from the cross DPX 1348 X DP 415. DPX 1348 is a selection from DP 417 x Bedford. DPX 3640 is a mid group VI maturing similar to Young and 3 days later than DP 3627. It is being released because of its higher yield potential and nematode resistance as compared to DP 3606 and DP 3627.

DPX 3640 has purple flowers, grey pubescence and tan pods. Seeds are shiny yellow with imperfect black hila. It is about five inches taller than DP 3627 and DP 3606. It is resistant to soybean cyst nematode race 3, stem canker, common root knot nematode, frogeye leaf spot and soybean mosaic virus. It is tolerant to phytophthora root rot and high chloride soils.

## KEY FEATURES

- Mid group VI maturity
- Excellent standability
- Out yields DP 3627 by 14%
- Resistant to race 3 cyst nematode
- Resistant to stem canker
- Resistant to common root knot nematode
- Resistant to frogeye leaf spot
- Tolerant to high chloride soils
- Resistant to soybean mosaic virus

## CHARACTERISTICS

| | |
|---|---|
| Maturity | Mid group VI |
| Flower Color | Purple |
| Pubescence Color | Grey |
| Hilum Color | Imperfect Black |
| Plant Height | Tall |
| Lodging Resistance | Very Good |
| Shatter Resistance | Excellent |
| Seed Size | Medium |
| Stem Canker | Resistant |
| Phytophthora Root Rot | Field Tolerant |
| Cyst Nematode | Resistant to Race 3 |
| Common Root Knot Nematode | Resistant |
| Peanut Root Knot Nematode | Moderately Susceptible |
| Lance Nematode | Unknown |
| Red Crown Rot | Unknown |
| Aerial Blight | Unknown |
| Frogeye Leaf Spot | Resistant |
| Sudden Death Syndrome | Unknown |
| High Chloride | Tolerant |
| Soybean Mosaic Virus | Resistant |

## II. Agronomic Characteristics

| Line | Mat. | Plant Height | Ldg. | Shat. | Seeds/ Lb. | % Pro. | % Oil |
|---|---|---|---|---|---|---|---|
| DPX 3640 | +3 | 36 | 2.1 | Exc. | 3500 | 35.5 | 18.7 |
| YOUNG | +3 | 36 | 1.9 | GOOD | 3200 | 37.7 | 18.1 |
| DP 3627 | 0 | 31 | 1.8 | Exc. | 3300 | 37.2 | 18.5 |
| P 9641 | +1 | 30 | 1.6 | GOOD | 3200 | 36.9 | 18.0 |

## III. Yield Data:

1993-94 Yield & Agronomic Data Summary

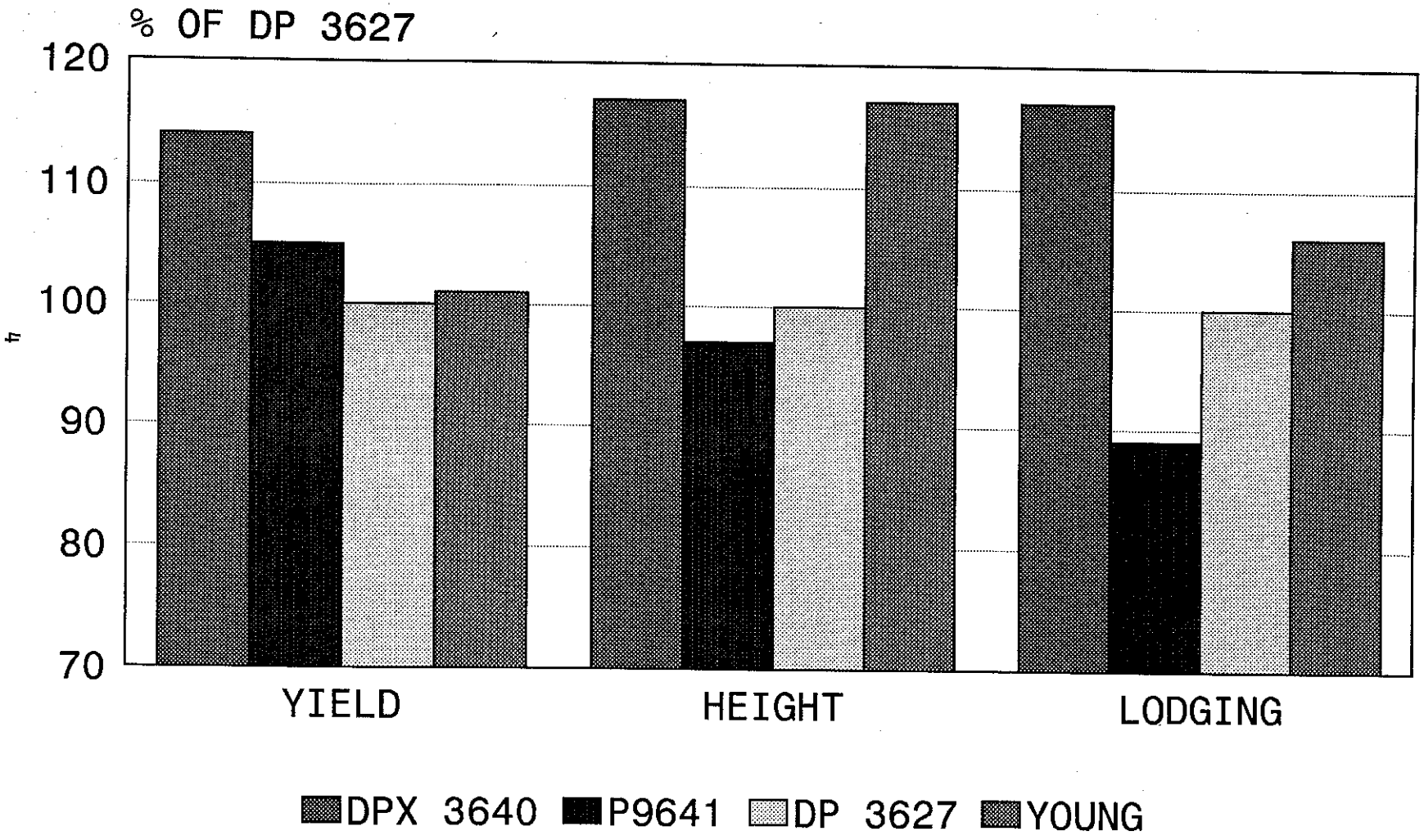
| Line | Yield | % Yield | Mat. | Hgt. | Ldg. |
|---|---|---|---|---|---|
| DPX 3640 | 52.6 | 114 | +3 | 36 | 2.1 |
| P9641 | 49.2 | 105 | +1 | 30 | 1.6 |
| DP 3606 | 49.2 | 105 | -1 | 31 | 2.0 |
| YOUNG | 47.4 | 101 | +3 | 36 | 1.9 |
| DP 3627 | 46.7 | 100 | 0 | 31 | 1.8 |
| # TESTS | 22 | 22 | 9 | 16 | 16 |

1994 Yield & Agronomic Data Summary - 465M

| Line | Yield | % Yield | Mat. | Hgt. | Ldg. |
|---|---|---|---|---|---|
| DPX 3640 | 50.9 | 109 | +4 | 34 | 2.0 |
| DP 3606 | 50.0 | 107 | -1 | 30 | 2.0 |
| P9641 | 47.8 | 102 | +1 | 29 | 1.3 |
| DP 3627 | 46.8 | 100 | 0 | 30 | 1.9 |
| YOUNG | 44.9 | 96 | +4 | 34 | 1.6 |
| # TESTS | 11 | 11 | 5 | 9 | 7 |

# DPX 3640

## 1993-94 YIELD & AGRONOMIC SUMMARY



1993 Yield & Agronomic Data Summary - 365M

| Line | Yield | % Yield | Mat. | Hgt. | Ldg. |
|---|---|---|---|---|---|
| DPX 3640 | 54.2 | 119 | +3 | 38 | 2.2 |
| DP 3627 | 45.6 | 100 | 0 | 33 | 1.8 |
| DP 3606 | 48.4 | 106 | -1 | 32 | 2.1 |
| P9641 | 50.5 | 111 | 0 | 31 | 1.9 |
| YOUNG | 49.8 | 109 | +2 | 37 | 2.2 |
| # TESTS | 11 | 11 | 4 | 7 | 9 |

Yield Summary in Bu/A

By Region: 1993-94

| LINE | MIDSOUTH | | SOUTHEAST | | OVERALL MEAN | |
|---|---|---|---|---|---|---|
| | YLD | % YLD | YLD | % YLD | YLD | % YLD |
| DP 3640 | 53.9 | 114 | 50.8 | 113 | 52.6 | 114 |
| DP 3606 | 48.9 | 104 | 49.6 | 110 | 49.2 | 105 |
| P9641 | 47.9 | 102 | 50.7 | 112 | 49.2 | 105 |
| YOUNG | 46.8 | 99 | 48.3 | 107 | 47.4 | 101 |
| DP 3627 | 47.1 | 100 | 45.1 | 100 | 46.7 | 100 |
| # TESTS | 12 | 12 | 10 | 10 | 22 | 22 |

By States: 1993-94

| LINE | TN | AR | MS | LA | NC | SC | VA | GA | MEAN |
|---|---|---|---|---|---|---|---|---|---|
| DP 3640 | | 53.6 | 55.6 | 52.6 | 53.5 | 45.0 | | 50.9 | 52.6 |
| DP 3606 | | 46.9 | 48.5 | 51.2 | 49.8 | 44.5 | | 53.0 | 49.2 |
| P9641 | | 46.1 | 48.4 | 49.3 | 52.4 | 41.5 | | 53.7 | 49.2 |
| YOUNG | | 49.4 | 49.0 | 42.0 | 49.7 | 37.4 | | 51.4 | 47.4 |
| DP 3627 | | 50.2 | 44.5 | 46.7 | 47.2 | 32.8 | | 49.2 | 46.7 |
| # TESTS | | 4 | 4 | 4 | 4 | 2 | | 4 | 22 |

By Soil Type Planting and Disease Situation: 1993-94

| Line | Loam | Clay | Early Planted | SCN | Stem Canker | Root Knot | SDS | Aerial Blight |
|---|---|---|---|---|---|---|---|---|
| DPX 3640 | 58.8 | 52.7 | 53.3 | 50.7 | 59.0 | 44.9 | | |
| DP 3606 | 54.0 | 49.8 | 50.1 | 44.6 | 66.4 | 41.9 | | |
| P9641 | 56.4 | 48.7 | 48.3 | 42.9 | 53.5 | 42.7 | | |
| DP 3627 | 55.0 | 44.0 | 49.2 | 45.7 | 32.8 | 23.1 | | |
| YOUNG | 54.0 | 43.8 | 50.7 | 47.1 | 33.6 | 40.7 | | |
| # TESTS | 8 | 6 | 2 | 3 | 1 | 2 | | |

1993-94 Head to Head Comparisons

| DPX 3640 vs | Total Comp. | Won by-Bu/A | # Wins | % Wins |
|---|---|---|---|---|
| DP 3627 | 22 | 6.9 | 16 | 73 |
| DP 3606 | 22 | 3.4 | 16 | 73 |
| YOUNG | 22 | 5.2 | 21 | 95 |
| P 9641 | 22 | 3.4 | 17 | 77 |

YIELD IN BU/A
BY TESTS AND LOCATIONS

1994 - 465M

| Line | MIDSOUTH | | | | | | |
|---|---|---|---|---|---|---|---|
| | AR CD | AR DM | MS SL | MS SC | LA TL | LA MG | Mid-Sth Mean |
| DP 3640 | 53.8 | 47.7 | 59.1 | 52.7 | 40.4 | 59.0 | 52.1 |
| DP 3606 | 50.7 | 35.9 | 47.8 | 48.7 | 41.8 | 66.4 | 48.6 |
| P9641 | 49.5 | 35.0 | 44.6 | 45.0 | 44.2 | 53.5 | 45.3 |
| S62-66 | 60.7 | 38.1 | 39.4 | 45.4 | 46.6 | 35.1 | 44.2 |
| DP 3627 | 56.5 | 37.1 | 50.3 | 38.1 | 47.2 | 32.8 | 43.7 |
| YOUNG | 50.9 | 41.4 | 45.6 | 44.3 | 39.0 | 33.6 | 42.5 |
| DP 3682 | 48.5 | 35.7 | 43.3 | 47.4 | 28.4 | 47.1 | 41.7 |
| C.V. | 8.4 | 12.3 | 10.6 | 9.2 | 10.0 | 7.1 | |
| LSD .05 | 5.6 | 9.7 | 8.2 | 6.2 | 5.8 | 5.9 | |

| | SOUTHEAST | | | | | | |
|---|---|---|---|---|---|---|---|
| Line | NC SF | NC CL | SC OS | GA MT | GA PL | Sth-East Mean | Over All Mean |
| DPX 3640 | 46.4 | 55.5 | 41.5 | 35.7 | 67.7 | 49.0 | 50.9 |
| DP 3606 | 45.9 | 49.9 | 49.8 | 42.5 | 70.3 | 51.7 | 50.0 |
| P9641 | 50.4 | 51.2 | 36.4 | 42.5 | 73.7 | 50.8 | 47.8 |
| S62-66 | 50.1 | 54.1 | 42.0 | 39.8 | 67.7 | 50.7 | 47.2 |
| DP 3627 | 43.9 | 52.1 | 39.1 | 46.1 | 71.7 | 50.6 | 46.8 |
| YOUNG | 41.2 | 54.3 | 33.3 | 46.2 | 63.7 | 47.7 | 44.9 |
| DP 3682 | 41.3 | 51.3 | 32.9 | 37.7 | 64.7 | 45.6 | 43.5 |
| C.V. | 5.0 | 6.5 | 7.8 | 14.4 | 7.9 | | |
| LSD .05 | 4.6 | 5.9 | 4.4 | 13.7 | 7.1 | | |

1993 - 365M

| | MIDSOUTH | | | | | |
|---|---|---|---|---|---|---|
| Line | AR CD | AR DM | MS SL | MS SC | LA TL | LA MG |
| DP 3640 | 63.8 | 48.9 | 57.7 | 52.9 | 47.7 | 63.4 |
| P9641 | 57.5 | 42.5 | 54.1 | 49.8 | 38.5 | 60.8 |
| YOUNG | 59.5 | 45.6 | 55.7 | 50.2 | 41.3 | 54.2 |
| DP 3606 | 53.1 | 48.0 | 52.2 | 45.4 | 39.7 | 56.9 |
| DP 3627 | 59.2 | 48.0 | 50.3 | 39.1 | 50.3 | 56.4 |
| C.V. | 6.4 | 5.6 | 13.3 | 8.1 | 8.5 | 7.4 |
| LSD .05 | 6.1 | 4.3 | 11.6 | 6.4 | 6.1 | 7.3 |

| | | SOUTHEAST | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Line | Mid-Sth Mean | NC CL | NC SF | SC OS | GA PL | GA VD | Sth-East Mean | Over All Mean |
| DPX 3640 | 55.7 | 49.5 | 62.5 | 48.4 | 58.8 | 41.3 | 52.1 | 54.2 |
| P9641 | 50.5 | 46.1 | 61.7 | 46.5 | 59.9 | 38.8 | 50.6 | 50.5 |
| YOUNG | 51.1 | 45.0 | 58.3 | 41.5 | 55.9 | 39.8 | 48.1 | 49.8 |
| DP 3606 | 49.2 | 45.7 | 53.8 | 39.1 | 54.5 | 44.7 | 47.5 | 48.4 |
| DP 3627 | 50.5 | 44.4 | 48.4 | 26.5 | 59.4 | 19.6 | 39.6 | 45.6 |
| C.V. | | 9.0 | 10.4 | 21.0 | 5.1 | 19.9 | | |
| LSD .05 | | 6.9 | 10.0 | 14.3 | 5.0 | 12.6 | | |

## V. DISEASE REACTION AND OTHER INFORMATION:

Cyst Nematode

DPX 3640 is resistant to races 1 and 3 and moderately susceptible to race 14 of soybean cyst nematode.

Race 3

| | 1993 1 2 3 4 5 | 1994 1 2 3 4 5 |
|---|---|---|
| DPX 3640 | 7 0 0 0 0 | 5 0 0 0 0 |
| Res. Chk. | 7 0 0 0 0 | 9 1 0 0 0 |
| Sus. Chk. | 0 0 0 0 7 | 0 2 2 4 0 |
| Location: | Jackson, TN | Scott, MS |
| Conducted by: | Dr. Lawrence Young USDA, Nematologist | Grover Shannon Grady Robinson |

Race 14

| | 1993 1 2 3 4 5 | 1994 1 2 3 4 5 |
|---|---|---|
| DPX 3640 | 0 0 0 1 3 | 0 0 3 3 2 |
| Res. Chk. | 0 0 0 0 5 | 0 0 0 5 1 |
| Sus. Chk. | 4 3 0 0 0 | 0 1 7 1 0 |
| Location: | Jackson, TN | Scott, MS |
| Conducted by: | Dr. Lawrence Young USDA, Nematologist | Grover Shannon Grady Robinson |

Root Knot Nematode 1 = No galling 5 = Very severe galling
DPX 3640 is resistant to common root knot nematode and moderately susceptible to peanut root knot nematode.

| | Common Root Knot M. Incognita | | Peanut Root Knot M. arenaria | |
|---|---|---|---|---|
| | 1993 | 1994 | 1993 | 1994 |
| DPX 3640 | 2.0 | 1.0 | 4.0 | 2.5 |
| Resistant Ck. | 3.0 | 2.0 | 1.0 | 1.5 |
| Susceptible Ck. | 4.5 | 3.5 | 4.5 | 4.0 |
| Location: | Jay, FL | | Jay, FL | |
| Conducted by: | Dr. Robert Kinloch Nematologist University of Florida | | Dr. Robert Kinloch Nematologist University of Florida | |

Stem Canker 1 = No symptoms 5 = Very severe symptoms
DPX 3640 is resistant to stem canker.

| | 1993 | 1994 |
|---|---|---|
| DPX 3640 | 3.0 | 1.3 |
| DP 3627 | 4.0 | 4.7 |
| DP 3606 | 1.0 | 1.0 |
| YOUNG | 3.0 | 4.7 |
| P9641 | 3.0 | 3.0 |
| Location: | Dumas, AR | Morganza, LA |
| Conducted by: | Grady Robinson Grover Shannon | Grover Shannon |

Frogeye Leaf Spot 1 = None 5 = Very Severe symptoms
DPX 3640 is probably resistant to frogeye leaf spot based on limited observations.

Sudden Death Syndrome 1 = None 5 = Very severe symptoms
DPX 3640 reaction to sudden death syndrome is unknown.

Soybean Mosaic Virus 1 = None 5 = Very severe symptoms
DPX 3640 is resistant to soybean mosaic virus.

| | 1994 |
|---|---|
| DPX 3640 | 1.0 |
| YOUNG | 2.0 |
| P9641 | 3.0 |
| S62-66 | 3.5 |
| DP 3606 | 1.5 |
| DP 3627 | 3.0 |
| Location: | Scott, MS |
| Conducted by: | Grover Shannon |

Aerial Blight 1 = None 5 = Very Severe
DPX 3640 reaction to aerial web blight is unknown.

Herbicide Tolerance
DPX 3640 has no known sensitivity to common soybean herbicides when used as directed. It is found to have normal tolerance to Metribuzin.

Chloride Tolerance
DPX 3640 is tolerant to high chloride soils based on data from Dr. Darrel Widdick of Arkansas State University.

Seed Stock
There are 132 bushels of foundation DPX 3640 and 2 units of breeder seed.